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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/893,546

06/29/2001

Jukka Henriksson

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09/21/2004

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EXAMINER

LE, AMANDA T

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/893,546

Applicant(s)

HENRIKSSON, JUKKA

Examiner

Amanda T Le

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 12-18, 21, 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8-11, 19, 20 and 22-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 62901.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-4, 7, 14-18, 21, 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamamoto (US 6,151,372).

Yamamoto discloses a diversity receiver comprising the following claimed limitations:

In claims 1-4, 14-18 and 27, “a receiver for receiving a multi-carrier signal conveying data and reference signals and having a first and second diversity branches, each diversity branch being operable to extract the data and reference signals from the multi-carrier signal, thereby producing a first and second set of extracted data and reference signals” (Fig. 2, 3, Abstract), “a processor adapted to determine an estimation of the reliability of an extracted reference signal from each set of extracted reference signals” (Fig. 2, 61s, Fig. 3, 61s), “a combiner adapted to

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combine a data signal from the first and second set of extracted data signals in accordance with the determined estimation” (Fig.2, 64, Fig. 3, 66).

In claims 7 and 21, “the combiner applies a weighting to each extracted data signal prior to combining” (Fig. 2, 63s, Fig. 3).

3. Claims 1-4, 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Li (US 6,654,429).

In claims 1-4, 12, 13, 15-18, 26, Li discloses a pilot-aided channel estimation for OFDM in wireless systems comprising the following claimed limitations: “a receiver for receiving a multi-carrier signal conveying data and reference signals and having a first and second diversity branches, each diversity branch being operable to extract the data and reference signals from the multi-carrier signal, thereby producing a first and second set of extracted data and reference signals” (Fig. 2, 3), “a processor adapted to determine an estimation of the reliability of an extracted reference signal from each set of extracted reference signals” (Fig. 2, 126, Fig. 3, 140), “a combiner adapted to combine a data signal from the first and second set of extracted data signals in accordance with the determined estimation” (Fig.2, 128).

In claims 12, 26, “the processor is a filter” (Abstract, Fig. 3, 152).

In claim 13, “the receiver comprises at least a third diversity branch” (col. 3, lines 47-50).

*Allowable Subject Matter*

4. Claims 5, 6, 8-11, 19, 20, 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: Prior art of record, taken individually or collectively, fails to incorporate the following claimed limitations: (i) the process of calculation determines the median of a set of extracted reference signals, (ii) the process of calculation determines the mean of a set of extracted reference signals, (iii) the combiner combines the first and second set of extracted data signals in a first manner when the difference between the determined reliability of each set of reference signals is above a predetermined threshold and for combining the first and second set of extracted data signals in a second manner when the determined reliability difference of each set of reference signals is below the predetermined threshold.

*Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ghazi-Moghadam et al, Namekata et al, Thomas et al, and Backman et al disclose different embodiments of diversity receivers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda T Le whose telephone number is (571) 272-3052. The examiner can normally be reached on 10:30 A.M. through 7:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Amanda T. Le". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

AMANDA T. LE  
PRIMARY EXAMINER